AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0001] with the following rewritten paragraph:

[0001] This application is related to U.S. Pat. No. 6,839,390 ~~Application No. (10/055,155), filed 01/23/2002, titled "Voting System for Improving the Performance of Single-User Decoders within an Iterative Multi-User Detection System" <attorney docket number D4607>~~; U.S. Pat. No 7,110,439 ~~Application No. (10/105,918), filed 03/25/2002, titled "System for Decreasing Processing Time in an Iterative Multi-User Detector System" <attorney docket number D4608>~~; and U.S. Application No. (10/423655), filed 4/25/03, titled "Deferred Decorrelating Decision-Feedback Detector For Supersaturated Communications" <attorney docket number D4625-US>. Each of these applications is herein incorporated in its entirety by reference for all purposes.

Please replace paragraph [0060] with the following rewritten paragraph:

[0060] The multiuser detection unit **20** outputs a bit (or symbol) stream associated with each interfering signal present on the channel for one data block. Deinterleavers and interleavers (not shown) are optional elements coupled between the MUD **20** and the decoders **40** that are used if the transmitted signals are interleaved, such as the CDMA format. The MUD detector **20** passes either hard decisions or soft decisions in the form of reliability, or confidence, measures to the decoders **40**. The reliability measures are presented with one associated with each symbol of each user to the bank of decoders **40**. If the signals were transmitted with interleaving, the reliability measures from the MUD **20** are first passed through a deinterleaver (not shown) and passed on in shuffled form to the decoder **40**. Shuffling refers to processing the same values but changes the placement or presentation of the values. If interleaving was present in the transmitter, an interleaver unit performs interleaving. The time-shuffled conditional probabilities are input back to the MUD section **20**. When the transmitter employs interleaving it changes the presentation of the values but not the values themselves. For example, IS-95 is the North American Cell Phone standard that employs interleaving.

Please replace paragraph [0061] with the following rewritten paragraph:

[0061] In one known variation, there is a bank of error correction decoders **40** that provide soft output or restore values associated with prior probabilities. Viterbi decoders can be used, but generally outputs hard values. The single user decoders calculate values of conditional probabilities, one for each decoded symbol of each user, and output them as confidence values back to the MUD **20**. Soft input soft output decoders, such as MAP or soft-output Viterbi algorithm (SOVA) decoders are examples known in the art. As the output of the decoders **40** is taken here for discussion purposes to be soft values, it should be understood that the hard decision is optional depending upon the application and the implementation requirements.

Please replace paragraph [0066] with the following rewritten paragraph:

[**0066**] Referring to **Figure 2**, which shows one embodiment the present invention which incorporates a high complexity MUD **100** on the first iteration but then standard low complexity MUD **120** processing for subsequent iterations. The first iteration is the most important in order to establish initial accuracy, and therefore uses the higher complexity MUD **100**, with better performing algorithms such as M-algorithm, T-algorithm, FANO or reduced state Viterbi. For the remaining iterations of the Turbo-MUD, it will suffice to switch over to any of the lower complexity linear MUD algorithms **120**, which allow the present invention to operate in real-time and with lower complexity computational processing. The first iteration high complexity MUD **100** ~~jumps~~ jump starts the system in obtaining a 'better' starting foundation for subsequent processing ~~building decision trees~~. It is within the scope of the invention to use any tree pruned search for the high complexity MUD **100** in order to do good suboptimal searching to tree prune without having to do every search.

Please replace paragraph [0069] with the following rewritten paragraph:

[**0069**] The high complexity MUD **100** outputs, for each user, a bit (or symbol) stream or a stream of soft values corresponding to the probability that a certain bit or symbol was sent by each user. The high complexity MUD is coupled to the parameter estimation unit **90** for

obtaining information on the received signals. An optional deinterleaver **105** is employed for transmission received in an interleaved format, such as CDMA. These symbol streams are sent to a bank of error correcting decoders **110**, which can be optionally interleaved **115** before being passed to the low complexity MUD **120**. In one embodiment of this invention, decoders **110** provides [[a]] soft outputs in the form of a stream of values corresponding to the probability that a certain bit or symbol was transmitted within each interfering user's signal present in the received signal. The soft data streams are passed to the low complexity MUD **120**.

Please replace paragraph [0093] with the following rewritten paragraph:

[**0093**] For example, the commonly owned patent applications describing varied forms of multi-user systems are hereby incorporated by reference for all purposes and include U.S. Pat. No. 6,839,390 ~~Application No. (10/055,155), filed 01/23/2002, titled "Voting System for Improving the Performance of Single-User Decoders within an Iterative Multi-User Detection System" <attorney docket number D4607>~~; U.S. Pat. No 7,110,439 ~~Application No. (10/105,918), filed 03/25/2002, titled "System for Decreasing Processing Time in an Iterative Multi-User Detector System" <attorney docket number D4608>~~; and U.S. Application No. (10/423655), filed 4/25/03, titled "Deferred Decorrelating Decision-Feedback Detector for Supersaturated Communications" <attorney docket number D4625-US>.